MAR II

WEAR CHECK Inland Marine Oil Analysis Program

OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	NORMAL

Area
DAVID M OLAUGHLIN
Machine Id
[DAVID M OLAUGHLIN] 003 670547-3
Component
Starboard Main Engine
Fluid
CHEVRON DELO 710 LS (300 GAL)

RECOMMENDATION

Resample at the next service interval to monitor.

WEAR

All component wear rates are normal.

CONTAMINATION

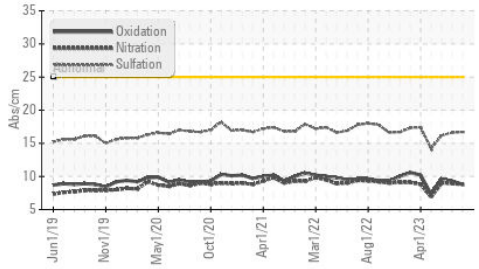
There is no indication of any contamination in the oil.

FLUID CONDITION

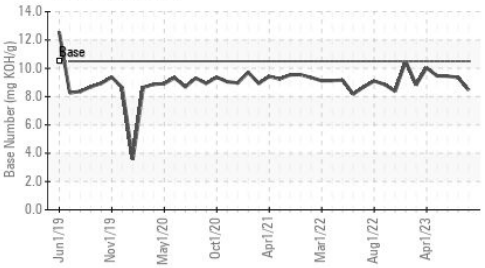
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		MW06234049	MW06186402	MW0046533
Sample Date		Client Info		01 Jul 2024	01 May 2024	01 Dec 2023
Machine Age	hrs	Client Info		6918	5500	1857
Oil Age	hrs	Client Info		6918	5500	1857
Filter Age	hrs	Client Info		0	0	389
Oil Changed		Client Info		N/A	N/A	N/A
Filter Changed		Client Info		N/A	N/A	N/A
Sample Status				NORMAL	NORMAL	NORMAL
Iron	ppm	ASTM D5185m	>75	16	13	20
Chromium	ppm	ASTM D5185m	>8	1	<1	2
Nickel	ppm	ASTM D5185m	>2	<1	0	<1
Titanium	ppm	ASTM D5185m	>3	<1	0	<1
Silver	ppm	ASTM D5185m	>2	<1	0	0
Aluminum	ppm	ASTM D5185m	>15	2	<1	4
Lead	ppm	ASTM D5185m	>18	9	7	10
Copper	ppm	ASTM D5185m	>80	23	11	16
Tin	ppm	ASTM D5185m	>14	6	5	8
Vanadium	ppm	ASTM D5185m		<1	0	<1
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Silicon	ppm	ASTM D5185m	>20	11	4	6
Potassium	ppm	ASTM D5185m	>20	21	5	0
Fuel		WC Method	>4.0	<1.0	<1.0	<1.0
Water		WC Method	>0.1	NEG	NEG	NEG
Glycol	%	*ASTM D2982		NEG	NEG	NEG
Soot %	%	*ASTM D7844	>3	0.4	0.3	0.2
Nitration	Abs/cm	*ASTM D7624	>20	8.8	8.9	9.0
Sulfation	Abs/.1mm	*ASTM D7415	>30	16.7	16.6	16.2
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	NONE
Appearance	scalar	*Visual	NORML	NORML	NORML	NORML
Odor	scalar	*Visual	NORML	NORML	NORML	NORML
Emulsified Water	scalar	*Visual	>0.1	NEG	NEG	NEG
Sodium	ppm	ASTM D5185m	>75	42	14	4
Boron	ppm	ASTM D5185m		41	37	39
Barium	ppm	ASTM D5185m		0	0	0
Molybdenum	ppm	ASTM D5185m		48	45	44
Manganese	ppm	ASTM D5185m		2	1	1
Magnesium	ppm	ASTM D5185m		12	58	17
Calcium	ppm	ASTM D5185m		3518	3573	3620
Phosphorus	ppm	ASTM D5185m		14	32	16
Zinc	ppm	ASTM D5185m		6	25	23
Sulfur	ppm	ASTM D5185m		2311	2706	3032
Oxidation	Abs/.1mm	*ASTM D7414	>25	8.8	9.3	9.6
Base Number (BN)	mg KOH/g	ASTM D2896	10.5	8.46	9.34	9.45
Visc @ 100°C	cSt	ASTM D445	15.5	14.8	15.0	14.9

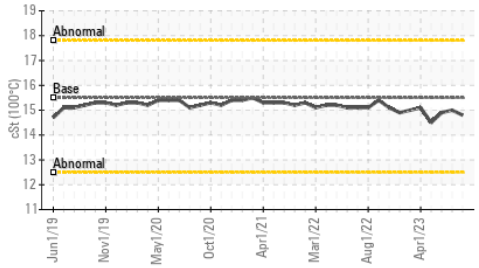
FT-IR (Direct Trend)



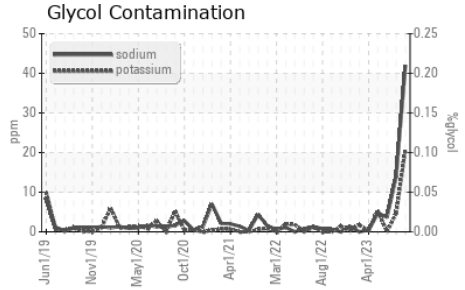
Base Number



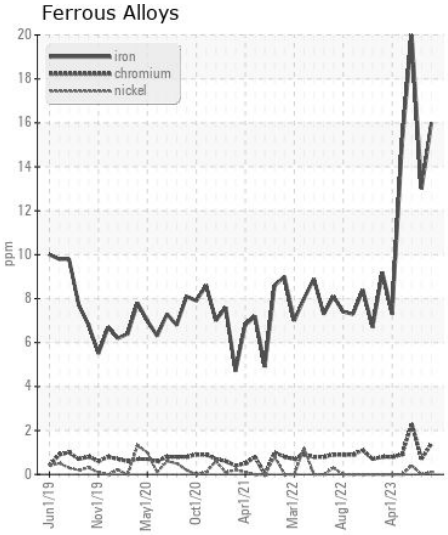
Viscosity @ 100°C



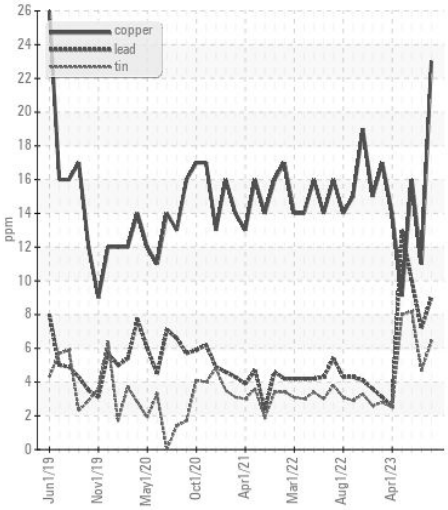
Glycol Contamination



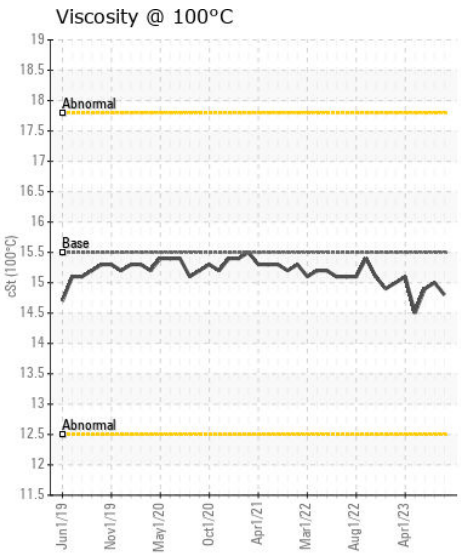
Ferrous Alloys



Non-ferrous Metals



Viscosity @ 100°C



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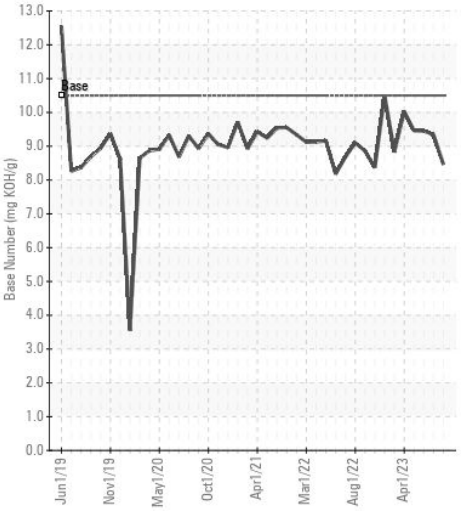

Certificate L2367

Laboratory	: WearCheck USA - 501 Madison Ave., Cary, NC 27513		
Sample No.	: MW06234049	**Received**	: 11 Jul 2024
Lab Number	: 06234049	**Tested**	: 16 Jul 2024
Unique Number	: 11122883	**Diagnosed**	: 16 Jul 2024 - Jonathan Hester
Test Package	: MAR 2 (Additional Tests: Glycol)		

To discuss this sample report, contact Customer Service at 1-800-237-1369.
** - Denotes test methods that are outside of the ISO 17025 scope of accreditation.*
Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)

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